

UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK

ANNE DE LACOUR, ANDREA WRIGHT,  
and LOREE MORAN individually and on  
behalf of all others similarly situated,

Plaintiffs,

v.

COLGATE-PALMOLIVE CO., and TOM'S  
OF MAINE INC.

Defendants.

Case No. 1:16-cv-08364

**DECLARATION AND EXPERT REPORT OF**

**J. MICHAEL DENNIS, PH.D.**

**JUNE 15, 2018**

I, J. Michael Dennis, Ph.D., declare as follows:

1. I have been retained by counsel for Plaintiffs in the matter of the named Plaintiffs Anne de Lacour, Andrea Wright, and Loree Moran ("Plaintiffs") versus the Colgate-Palmolive Co. and Tom's of Maine, Inc. ("Defendants"). If called upon to testify, I would and could testify competently to all such subject matter in this Declaration and Expert Report.
2. I am currently a Senior Vice President at NORC in Chicago, IL. I lead the online panel survey research business for NORC. NORC is one of the premier survey research organizations in the United States. Affiliated with the University of Chicago, NORC has conducted research for Federal, foundation, and academic clients for 75 years, and is responsible for some of the most prestigious survey projects in the U.S, including the General

Social Survey and the Survey of Consumer Finance. Prior to joining NORC in December 2014, I was a Managing Director at GfK (which acquired my employer Knowledge Networks in 2012). GfK is the fifth largest market research firm worldwide, offering research services in 90 countries. I have worked as a survey research expert for more than 20 years, authoring more than 60 articles, conference and seminar papers, or book chapters. I am recognized as an expert in survey research methods. I am a frequent speaker at the annual meetings of the American Association for Public Opinion Research (“AAPOR”) and the American Statistical Association. In recognition of my expertise in online surveys, I was appointed to be a member of the AAPOR Task Force on Online Panels that published recommendations for researchers regarding online surveys.

3. I have been personally involved in the design and conduct of hundreds of statistical surveys using the internet mode of data collection over the last 18 years, including the kind of consumer survey described in this report.
4. Designing and conducting surveys about the opinions, perceptions, attitudes, preferences, and values of consumers, voters, members of associations, and citizens is a service that I have provided for my customers for more than 20 years. I have designed and conducted consumer surveys that have been accepted by courts in the following cases:

- *Price [Miles] v. Philip Morris*. In the Circuit Court, Third Judicial Court, Madison County, Illinois. Case No. 00 L 0112.
- *Zill v. Sprint*. County of Alameda, Superior Court of the State of California. Case No. RG03114147. Collectively the “cellphone unlocking cases.”
- *Ebin v. Kangadis Food Inc.* U.S. District Court for the Southern District of New York. Case No. 1:13-cv-02311.
- *Sachs and Alden v. Toyota Motor Corporation*. Superior Court of the State of California, County of Los Angeles. Case No. BC443701.
- *Avram v. Samsung Electronics America, Inc. and Lowe’s Home Centers*. United States District Court for the District Of New Jersey. Civil Action No. 2:11-cv-6973 (KM) (SCM).
- *Geanacopoulos v. Philip Morris, USA*. Commonwealth of Massachusetts Superior Court. Civil Action No. 98-6002-BLSI.

- *Scotts EZ Seed Litigation*. U.S. District Court for the Southern District of New York. Case No. 12-CV-4727 (VB) (PED).
  - *Dzielak v Whirlpool*. U.S. District Court District of New Jersey. Case No. 12-cv-00090 (D.N.J.).
  - *Pettit v. Procter & Gamble [RE: Flushable Wipes]*. U.S. District Court for the Northern District of California. CASE NO. 3:15-CV-02150-RS.
5. I have participated in the design and execution of price premium studies using conjoint methodology and analysis in the context of litigations. These cases include, but are not limited to, *Brown v. The American Tobacco Company*; *Craft v. Philip Morris*; *Jones v. Nutiva*; *Hunter v. Nature's Way*; *Fitzhenry-Russell v. Dr. Pepper Snapple Group*; *Brenner v. Procter & Gamble Co.*; *Martinelli v. Johnson & Johnson and McNeil Nutritionals*. I have also participated in the design and execution of other price premium studies using non-conjoint approaches in *Price [Miles] v. Philip Morris*; *Zill v. Sprint*; *Ebin v. Kangadis Food Inc.*; *Sachs and Alden v. Toyota Motor Corporation*; *Avram v. Samsung Electronics America, Inc. and Lowe's Home Centers*; *Geanacopoulos v. Philip Morris, USA.*; *Scotts EZ Seed Litigation*; *Dzielak v Whirlpool*.
  6. I have testified on more than twenty occasions as an expert witness, both in deposition and at trial.
  7. During the period 2000 to 2013, I managed all the online panel research conducted by Knowledge Networks (acquired by GfK in January 2012) on behalf of federally funded principal investigators who conduct health, economic, social, and political research. When I began at Knowledge Networks as the Vice President of Operations and Survey Research in 2000, I was responsible for leading survey research for the company and for developing the probability-based KnowledgePanel, which was the core company asset for Knowledge Networks. As part of the start-up of Knowledge Networks, I also designed and implemented approximately 20 internally funded surveys in the areas of health, finance, public policy, and consumer research, and oversaw the scientific direction and operational management of the construction of KnowledgePanel.
  8. In 2001, I founded the client-facing business unit "Government & Academic Research" for Knowledge Networks. In the role of Managing Director, I oversaw a staff of more than 50

researchers. I advised clients on the design of all phases of their survey research projects, including sample design, questionnaire design, quality control procedures, and data analysis. The research I conducted has had to meet the high-quality standards maintained by federal sponsors of statistical surveys funded by agencies such as the U.S. Centers for Disease Control and Prevention, the Environmental Protection Agency, and the National Science Foundation. I have been the principal investigator for studies funded by the U.S. National Science Foundation. My opinions have been quoted in *The Wall Street Journal*, *The New York Times*, *Crain's Chicago Business*, and *Business Week*.

9. Before joining Knowledge Networks, I was a Senior Scientist at Abt Associates, where I managed the data collection for the largest random digit dialing telephone survey in the United States, the National Immunization Survey, which was funded by the U.S. Centers for Disease Control and Prevention with management support from the National Center for Health Statistics. I also led other survey studies funded by the National Institute on Alcohol Abuse and Alcoholism, the National Cancer Institute, the Social Security Administration, and the White House Office of National Drug Control Policy.
10. The cases in which I have testified as an expert, either at deposition or trial, during the last four years are:
  - A. June 24-June 25, 2014. Expert Testimony at Trial. *NCAA Student-Athlete Name and Likeness Licensing Litigation*. U.S. District Court for Northern District of California. Case No. 4:09-cv-01967-CW.
  - B. July 3, 2014. Expert Deposition. *Socratic Technologies, Inc. v Young Ko et al.* Superior Court of the State of California, City and County of San Francisco. Case No. CGC-13-530955.
  - C. July 31, 2014. Expert Deposition. *Jeffrey Sachs and James Alden v. Toyota Motor Corporation*. Superior Court of the State of California, County of Los Angeles. Case No. BC443701.
  - D. October 7, 2014. Expert Deposition. *Ebin v. Kangadis Food Inc.* U.S. District Court for the Southern District of New York. Case No. 1:13-cv-02311.
  - E. November 24, 2014. Expert Deposition. *Thomas Geanacopoulos v. Philip Morris, USA*. Commonwealth of Massachusetts Superior Court. Civil Action No. 98-6002-BLSI.
  - F. June 10, 2015. Expert Deposition. *Michael J. Otto v. Abbot Laboratories*. United States District Court, Central District of California. Case No. 5:12-CV-01411-SVW-DTB.
  - G. August 21, 2015. Expert Deposition. *Lynne Avram v. Samsung Electronics America, Inc. and Lowe's Home Centers*. In the United States District Court for the District Of New Jersey. Civil Action No. 2:11-cv-6973 (KM) (SCM).

- H. September 18, 2015. Expert Deposition. *Scott Miller v. Fuchu, Inc. and Fuhu Holdings, Inc.* In the United States District Court of California, Western Division. Case No. 14-cv-6119 CAS-AS.
- I. November 9-10, 2015. Expert Testimony at Trial. *Thomas Geanacopoulos v. Philip Morris, USA.* Commonwealth of Massachusetts Superior Court. Civil Action No. 98-6002-BLSI.
- J. February 5, 2016. Expert Deposition. *Miner v Philip Morris Companies, Inc. and Philip Morris, Incorporated.* In the Circuit Court of Pulaski County, Arkansas Sixth Division Case No. 60CV03-4661.
- K. February 12, 2016. Expert Deposition. *Scotts EZ Seed Litigation.* Case No. 12-CV-4727 (VB) (PED) (S.D.N.Y.).
- L. March 8, 2016. Expert Deposition. *Dzielak v Whirlpool.* Case No. 12-cv-00090 (D.N.J.).
- M. March 18, 2016. Expert Deposition. *Darisse v. Nest Labs, Inc.* Case No. 5:14-cv-01363. U.S. District Court of Northern California.
- N. March 22, 2016. Expert Testimony at Trial. *Larsen (formerly Craft) v. Philip Morris,* Missouri Circuit Court, Twenty-Second Judicial Court. Case No. 002-00406-02.
- O. May 5, 2016. Expert Deposition. *Miner v Philip Morris Companies, Inc. and Philip Morris, Incorporated.* In the Circuit Court of Pulaski County, Arkansas Sixth Division Case No. 60CV03-4661.
- P. August 29, 2017. Expert Deposition. *Jones et al. v. Nutiva.* Case No. 3-16-cv-00711-HSG. United States District Court for the Northern District of California.
- Q. October 17, 2017. Expert Deposition. *Brenner v The Procter & Gamble Co.* Case No.: 8:16-1093-JLS-JCG. United States District Court for the Central District of California.
- R. October 23, 2017. Expert Deposition. *Dean et al v Colgate-Palmolive Co.* Case No. 5:15-CV-00107. United States District Court for the Central District of California.
- S. November 13, 2017. Expert Deposition. *Joann Martinelli et al v. Johnson & Johnson and McNeil Nutritionals, LLC.* Case No. 2:15-cv-01733-JAM-DAD. United States District Court, Eastern District of California.
- T. November 21, 2017. Expert Deposition. *Strumlauf et al v. Starbucks Corporation.* Case No. 4:16-cv-C1306-YGR. United States District Court, Northern District of California.
- U. December 11, 2017. Expert Deposition. *In re: AMLA LITIGATION.* Civil Action No. 1:16-cv-06593 (JSR). United States District Court, Southern District of New York.
- V. January 19, 2018. Expert Deposition. *Williams-Sonoma Song-Beverly Act Cases.* Superior Court of the State of California, County of San Francisco. Case No. JCCP 4611.
- W. April 13, 2018. Expert Deposition. *Fitzhenry-Russell, et al. v. Dr. Pepper Snapple Group, Inc., Dr Pepper/Seven Up, Inc., and Does 1-50,* Case Nos. 5:17-cv-00564-NC (lead); 5:17-02341-NC (consolidated). United States District Court, Northern District of California.

11. My current *curriculum vitae* is attached as Attachment A.

12. Plaintiffs' counsel has retained my services at the hourly rate of \$400. My compensation is not contingent on the results of my work or any outcome of the litigation.

### **SCOPE OF MY EXPERT REPORT**

13. I understand that Plaintiffs contend that Defendants misled reasonable consumers by their use of the “natural” claim about their Tom’s of Maine product line (the “Tom’s Products” or the “Products”).<sup>1</sup> Plaintiffs allege that Defendants were able to obtain a price premium on their products as a result of deceiving consumers by falsely using the “natural” claim on their personal care products. According to Plaintiffs, they and class members have suffered economic loss because the Tom’s Products contain ingredients that are not natural.
14. I was asked by Plaintiffs’ counsel to design, conduct, and report on a reliable consumer survey to address issues relevant to the litigation. I understood my assignment was to measure whether the “natural” claim on Tom’s toothpaste products (of various sizes, pack sizes, and flavors) causes any market price premium to be paid by Tom’s of Maine consumers and, if so, the amount of the price premium. I understood my price premium survey would provide data for calculating any economic loss suffered by the proposed class of consumers. I understand that Plaintiffs’ counsel might ask me at a later time to measure the market price premium, if any, attributable to the “natural” claim on Tom’s deodorant products.<sup>2</sup>

### **OVERVIEW OF WORK PERFORMED**

15. Based on my knowledge and expertise in the fields of survey research and consumer market research, I designed and conducted a reliable price premium survey. The price premium survey, as indicated by its name, measures the market price premium, if any, that is attributable to the challenged “natural” claim used by Defendants on their toothpaste

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<sup>1</sup> See, generally, First Amended Class Action Complaint, Dkt. 8, filed January 18, 2018 (“Complaint”).

<sup>2</sup> In conducting a price premium survey regarding Tom’s deodorant products, I would use the same price premium survey methodology that I describe in this declaration and expert report, with appropriate changes to the sampling protocol and to the conjoint survey’s attributes and levels (e.g., to reflect the brands that compete with Tom’s deodorants, the price points for Tom’s of Maine deodorant products and its competitors’ products, and other factors that influence consumer choice of deodorant products).

products (of various sizes, pack sizes, and flavors). The price premium survey also provides evidence of the extent to which the challenged claim is material to consumers' purchasing decisions. I conducted the price premium survey in a number of sequential steps, as summarized here and further explained below.

16. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] also conducted a local market scan of Tom's toothpaste retail prices in the vicinity of San Francisco, California. Second, I began the process of designing the survey by creating a sampling plan for my price premium survey. I designed the sample plan to assure that the responses to my price premium survey would be generalizable to the proposed class. Third, I designed the price premium survey questionnaire based on my review of Defendants' product packaging and market research and my twenty-five years of experience in survey research, among other things. Fourth, I retained a survey vendor to program the survey questionnaire that I designed. Fifth, to test whether respondents understood the questionnaire, I conducted cognitive ("one on one") interviews with Tom's of Maine consumers using my price premium survey. Sixth, after making changes to the survey based on my cognitive interviews and review of the survey, I pretested the survey with Tom's of Maine consumers. Seventh, I compiled the data from the completed interviews, reviewed the data to assess the quality of the survey data, and analyzed the interviews. Finally, I wrote this declaration and expert report.
17. In addition, in designing the price premium survey, I considered supply-side factors and real-world market transaction information from consumer transaction data for Defendants' products and for their competitors, which I obtained from my market scan of retail prices of Tom's of Maine toothpastes and their competitors sold in grocery, discount, and drug stores in the San Francisco Bay Area (as shown in Attachment B), as well from market transaction data from Nielsen as provided by Mr. Weir.
18. I designed the price premium survey in consultation with Plaintiffs' damages expert, Mr.

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<sup>3</sup> COLGATETOMS00005158; COLGATETOMS00005284; COLGATETOMS00014108; COLGATETOMS00020980; COLGATETOMS00021173; COLGATETOMS00023391.



Weir. The data from my price premium survey provide a source of data for Mr. Weir to analyze and calculate the amount of economic damages suffered by class members that is specifically attributable to the challenged “natural” claim used by Defendants on their toothpaste products (of various sizes, pack sizes, and flavors).

19. I designed and conducted the price premium survey in conformance with best practices for litigation surveys as documented by Professor Shari Seidman Diamond of Northwestern University in her “Reference Guide on Survey Research.”<sup>4</sup> My price premium survey employs a sound methodology, in light of the considerations documented by Robert Groves *et al.* in their survey research textbook, Survey Methodology (Second Edition), by Peter Marsden and James Wright in the Handbook of Survey Research (Second Edition), by Norman Bradburn et al in Asking Questions, by Roger Tourangeau et al in The Psychology of Survey Response, and by marketing scientists specializing in price premium surveys and analysis (Green and Srinivasan, 1990; Orme, 2014; Sawtooth Software Technical Paper Series, 2009, 2017), among others.
20. I designed the price premium survey to provide data for the calculation of any economic damages suffered by the proposed class of Tom’s of Maine toothpaste consumers. If requested by Plaintiffs’ counsel, I would conduct my price premium survey with appropriate changes to calculate any price premium attributable to the “natural” claim for Tom’s of Maine deodorant products. In conducting such a price premium survey regarding Tom’s deodorant products, I would use the same price premium survey methodology that I used in my price premium survey of Tom’s toothpastes having the “natural” claim. I would make appropriate changes to the price premium survey to assure that my survey results are generalizable to the proposed class of Tom’s of Maine deodorant consumers. I would also make appropriate changes to the conjoint survey’s attributes and levels to reflect the brands that compete with Tom’s deodorants, the price points derived from real-world market transactions, and other factors that influence consumer choice of deodorant products. I would conduct cognitive interviews with Tom’s of Maine deodorant consumers and review the Defendants’ market research on deodorant products to inform the appropriate selection of

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<sup>4</sup> Shari Seidman Diamond, 2011, “Reference Guide on Survey Research,” Reference Manual on Scientific Evidence (Third Edition).



attributes and levels for the conjoint survey. I would use the same analytic approach in calculating the price premium, if any, that is solely attributable to the use of the “natural” claim on Tom’s of Maine deodorant products.

21. In the paragraphs below, I first describe the methodologies and document the steps that I took to design and implement the price premium survey and then, at the end of my report, I provide the price premium result.

### **METHODOLOGICAL CONSIDERATIONS FOR THE PRICE PREMIUM SURVEY**

22. My survey consisted of (i) a screening section of the survey to identify a representative sample of Tom’s of Maine toothpaste consumers for my price premium survey and (ii) the price premium survey itself based on Choice-Based-Conjoint methodology.
23. **Study Target Population.** The study target population for the consumer perception survey consisted of non-institutionalized U.S. adults age 18 and over who had purchased Tom’s of Maine toothpaste for personal use in the past 12 months (before taking the survey). To qualify for the consumer survey, respondents must answer a series of screening survey questions as shown in Attachments C and D for the survey questionnaire specifications and for Attachment E showing the online survey showed the respondents. The screening questions are mapped to the definition of the study target population. I designed the study target population to provide a representative sample of Tom’s toothpaste consumers whose responses would be generalizable to proposed class members in California, Florida, and New York. I designed the study target population to also provide reliable and generalizable data for the national population of Tom’s of Maine toothpaste consumers.
24. To qualify for the price premium survey and be a study participant, the respondents must answer a series of questions whereby their responses meet all of the following conditions: be a U.S. resident; be at least age 18; did not take a survey about oral care products in the past 30 days; purchases at least some of the groceries for their household; purchased Tom’s of Maine toothpaste for personal use during the past twelve months. Therefore, my sampling approach is premised on surveying adult U.S. consumers who are actual and recent purchasers of Tom’s of Maine toothpaste consumers. All my survey respondents purchased Tom’s of Maine toothpaste during the proposed class period (purchasers of Tom’s Products

on or after September 24, 2015).

25. **Conjoint Survey Methodology**. The price premium survey uses the choice-based conjoint methodology utilizing the Sawtooth software system for online data collection. (For the purposes of my declaration, I use interchangeably the expressions “price premium survey” and “conjoint survey.”) Choice-based conjoint is the most widely used type of conjoint survey.<sup>5</sup> Since at least the 1990s, conjoint surveys have been a generally accepted and commonly used tool in market research to estimate market demand for new products and services, among other purposes.<sup>6</sup> Specifically, choice-based conjoint is a standard marketing research technique for quantifying consumer preferences for products and for the component features that make up a product.<sup>7</sup> Conjoint analysis can be used to break down the utility of a conceptual feature into its component parts. My use of the conjoint methodology is to measure the marketplace price premium solely attributable to Defendants’ use of the challenged “natural” claim. Conjoint surveys are used widely in industry and government.<sup>8</sup> Conjoint is widely accepted by courts as a reliable methodology.<sup>9</sup>

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<sup>5</sup> See generally, the Sawtooth Software technical papers on choice-based conjoint available at <http://www.sawtoothsoftware.com/support/technical-papers>. See Orme, 2014; Sawtooth Software Technical Paper Series, 2009, 2017.

<sup>6</sup> Green, Paul E. and V. Srinivasan, 1990. Conjoint Analysis in Marketing Research: New Developments and Directions.

<sup>7</sup> Orme, 2014.

<sup>8</sup> While conjoint surveys have been common on market research since 1990s for product development and other purposes, it is increasingly used in the public sector. For instance, the Food and Drug Administration uses the approach in regulatory benefit-risk assessments. (F. Reed Johnson and Mo Zhou, 2016, “Patient Preferences in Regulatory Benefit-Risk Assessments: A US Perspective). In another example, public health planners are increasingly using choice-based conjoint to collect public input in health service planning, healthcare finance debates, and the treatment choices of individual patients, among other uses. Charles E. Cunningham, Ken Deal, and Yvonne Chen, December 2010, “Adaptive Choice-Based Conjoint Analysis: A New Patient-Centered Approach to the Assessment of Health Service Preferences.”

<sup>9</sup> See, e.g., *Dzielak v. Whirlpool Corp.*, 2017 WL 1034197, at \*6-8 (D.N.J. Mar. 17, 2017) (finding related methodology “passes muster under the *Daubert* considerations,” including its “relationship to other established reliable techniques (particularly, the conjoint analysis technique of which it is a part”); *In re: Lenovo Adware Litig.*, 2016 WL 6277245 (N.D. Cal. 2016) (certifying class where damages model was based on conjoint analysis); *In re ConAgra Foods, Inc.*, 90 F. Supp. 3d 919, 1027-31 (C.D. Cal. 2015) (concluding an expert’s “conjoint

26. My selection of the conjoint tool itself is based on the fact that conjoint surveys are, in substantial part, based on the fact that consumers are profoundly familiar with the task of shopping – comparing products, evaluating them, and making choices. Conjoint surveys take advantage of the fact that consumers are accustomed to making choices and their real-world experiences of choosing among product alternatives. An industry leader in conjoint analysis tools observes:

Choice-based conjoint analysis has attracted much interest in the marketing research field. There are several reasons for its position as the most widely used conjoint-related approach today: The task of choosing a preferred concept is similar to what buyers actually do in the marketplace. Choosing a preferred product from a group of products is a simple and natural task that everyone can understand.<sup>10</sup>

27. Prior to the adoption of choice-based conjoint in marketing research, it was common for researchers to ask respondents to rank and rate new product concepts and features. Choice-based conjoint, in contrast, asks the respondent to express their preferences by choosing from sets of concepts (such as product profiles). As such, the respondent experience in answering choice-based conjoint surveys is similar to what buyers actually do in the marketplace – that is, choosing a preferred product from a group of products.

28. I designed the conjoint survey to provide the respondents (i) the appropriate decision-making context for answering the choice questions, (ii) instructions for how to compare the product profiles and answer the choice questions, and (iii) clear descriptions of the attributes

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analysis is, at this stage, sufficiently reliable to be used in calculating class-wide damages”); *Guido v. L’Oreal USA, Inc.*, 2014 WL 6603730, at \*4-8 (C.D. Cal. 2014) (collecting cases and finding conjoint analysis satisfied class certification requirements of *Comcast*); *TV Interactive Data Corp. v. Sony Corp.*, 929 F. Supp. 2d 1006, 1020-26 (N.D. Cal. 2013) (denying motion to exclude conjoint analysis) *Microsoft Corp. v. Motorola, Inc.*, 904 F. Supp. 2d 1109, 1119-20 (W.D. Wash. 2012) (conjoint analysis survey was “admissible as relevant under FRE 401 and 402 and . . . sufficiently reliable under FRE 702 and *Daubert*”). *See also Khoday v. Symantec Corp.*, No. 11-180 (JRT/TNL), (2014 WL 1281600, at \*10 (D. Minn. March 13, 2014); *Sanchez-Knutson v. Ford Motor Company*, 310 F.R.D. 529, 538-39 (S.D. Fl. 2015); *Brown v. Hain Celestial Group, Inc.*, 2014 WL 6483216, at \*19 (N.D. Cal. Nov. 18, 2014); *Microsoft v. Motorola, Inc.*, 904 F.Supp.2d 1109, 1119-20 (W.D. Wa. 2012); *In re Scotts EZ Seed Litig.*, 304 F.R.D. 397, 413-15 (S.D.N.Y. 2015); *Briseno v. ConAgra Foods, Inc.*, 844 F.3d 1121 (9th Cir. 2017).

<sup>10</sup> Sawtooth Software Technical Paper Series, 2017, “The CBC System for Choice-Based Conjoint Analysis,” p.2.

themselves. The conjoint survey I designed and implemented for this study, in my expert opinion, is relatively simple and cognitively easy for respondents compared to standard market research conjoint surveys. The basis for this opinion is as follows:

- The survey sample was restricted to actual recent purchasers of Tom's of Maine toothpastes. I interviewed consumers that had recently experienced making purchases of Tom's of Maine toothpaste. Therefore, the conjoint survey had personal relevance to the respondents.
- Typical conjoint surveys can have six or more attributes for the respondents to consider. My survey has only six: brand, flavor, product benefits, product descriptions, ingredients, and price.
- Some conjoint surveys will present four product profiles for each choice task. My survey provides only three, which reduces the cognitive burden on the survey respondent and generally makes it easier for the respondent to process the presented product choices.
- Conjoint surveys often have 12 to 20 choice tasks for the respondent to consider and decide which products they prefer. My survey is on the low end of the usual range with only 10 choice tasks for each respondent. The result is more reliable data since there is less potential for respondents to experience fatigue in answering the choice questions.
- Respondents were provided a "None of these" option in the conjoint survey; therefore, respondents were not forced to select one of the three product profiles. Respondents not having a preference for a toothpaste product presented to them in the conjoint survey had the option to select "None of these."
- To reduce the complexity of the choice task for the respondents, I kept the product size of the toothpaste a constant (5.5 ounces) for the product profiles in the conjoint survey. Therefore, the respondents did not have to weigh the potential for variations in product size when making their product choices in the conjoint survey.
- Also, to reduce cognitive burden on the respondents, I showed the respondent only two to five claims for each product profile. Respondents were randomly presented a subset of claims from the list of thirteen possible claims. "Natural" – the challenged claim – is one of the thirteen possible claims shown in the product profiles.

29. These steps are generally accepted techniques in the field to prevent excessive cognitive burden on respondents and produce reliable responses from conjoint surveys.

30. In determining which attributes to include in the conjoint survey, I considered the

information collected during my cognitive interviews with Tom's of Maine consumers. [REDACTED]

31. I included the logos for the five toothpaste brands presented in my survey to improve the recognizability of the specific brands for my price premium survey respondents. I emphasized the brand attribute in the price premium survey by displaying the brand logos on the top row of the choice screens. Because my survey respondents are actual consumers of toothpaste, the respondents could rely on their personal experience with the toothpaste brands in making their choices in the price premium survey. For instance, in making their choices, respondents can consider whether they prefer the taste, texture, color, etc. of the brand. Moreover, by including the brand attribute in the choice screens (as logos), the "brand equity" of the brand will be reflected in respondents' answers to my choice questions since the brand logos enable the respondent to factor in any family history, inertia, nostalgia, or personal traditions regarding the brand.<sup>12</sup> [REDACTED]

[REDACTED] The brand logos are shown below.

32. In designing the conjoint survey, I considered and included numerous real-world, supply-side

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<sup>11</sup> COLGATETOMS00005158; COLGATETOMS00005284; COLGATETOMS00014108; COLGATETOMS00020980; COLGATETOMS00021173; COLGATETOMS00023391.

<sup>12</sup> Market researchers commonly refer to "brand equity" or "brand-specific effect" as the component of consumer preference that is not explained by "objectively measured attributes" (such as the features of a product). *See* Park and Srinivasan, 1994, p.272.

factors for the products at issue, so that my survey would accurately measure the price premium attributable to the challenged claim, *i.e.*, the intersection between demand-side factors (willingness to pay) and supply-side factors (willingness to sell), to determine the actual effect of the challenged claim on market price. I took into account the fact that this product is sold in a well-developed, longstanding, and competitive market, through a variety of retail outlets. My price premium survey included market-based price points for Tom's of Maine toothpaste and their competitors based on actual real-world prices that consumers have paid for the products. The actual real-world pricing of the products reflects the actual number of units sold, the costs of manufacturing, the costs for distribution, advertising, and marketing, and margin, among other supply-side factors. My price premium survey also incorporates other market-based attributes besides price, such as actual competing products in the marketplace identified by Defendants. I used real brand logos, product photos and actual wording of label claims and ingredient lists from these competing brands in the survey. Further, I took into account the fact that the quantity supplied of Defendants' and competitors' toothpaste products is a known fact and is fixed as a matter of history.

33. Other sources of information that I considered in designing the conjoint survey include the following: advertised pricing and actual retail and wholesale transaction data for Defendants' products and the products of their competitors; a market scan of the leading brands of toothpaste available for purchase in retail stores (Attachment B); and Defendants' and competitors' product labels used during the class period, among other things.
34. The conjoint survey that I designed and implemented is based on certain "levels" within the attributes. To define terms, an "attribute" is a feature type such as brand, price, or a label on the product package. A "level" is one of the options for an attribute. For instance, "Tom's of Maine" is a level for the "Brand" attribute, while "Peppermint" is a level for the "Flavor" attribute. Each attribute in the conjoint survey has two or more levels.
35. The attributes and levels used in the conjoint survey are shown below in two tables to facilitate the presentation: a table for the attributes and levels for the non-ingredients attributes and a separate table for the ingredients attribute.

**Attributes and Levels for the Price Premium Survey, Excluding the Ingredients**  
**Attribute**

<b>ATTRIBUTES</b>	<b>LEVELS</b>
<b>[REDACTED]</b>	Tom's of Maine
	[REDACTED]
	[REDACTED]
	[REDACTED]
	[REDACTED]
<b>Flavor</b>	Clean Mint
	Fresh Mint
	Strawberry
	Peppermint
	Spearmint
	Fennel
<b>Product Benefits</b>	Cavity Protection
	Whole Care
	Sensitive
	Antiplaque & Whitening
	Deep Clean
	Advanced Whitening
<b>Product Descriptions</b>	Natural
	Fluoride-Free
	With Fluoride
	Clinically Proven
	Whitening
	Clinically Proven Whitening Technology
	Fresh Breath
	Fights Cavities
	Helps Prevent Tartar Build-Up
	Safe for Enamel
	No Artificial Dyes or Sweeteners
	Helps Prevent Stains
	Baking Soda
<b>Price</b>	\$3.00
	\$4.00
	\$5.00
	\$6.00



**The Ingredients Attribute and Levels, with the Product Associated with the Ingredients**

<b>Ingredient No.</b>	<b>Ingredient List</b>	<b>Derived from this Product and Shown for this Toothpaste in the Conjoint</b>
<b>Ingredients 1</b>	Active Ingredient: Sodium Monofluorophosphate (0.76%) (0.15% w/v Fluoride Ion). Inactive Ingredient: Calcium Carbonate, Water, Glycerin, Sodium Bicarbonate, Xylitol, Sodium Lauryl Sulfate, Natural Flavor, Carrageenan, Benzyl Alcohol	Tom's of Maine "Cavity Protection"
<b>Ingredients 2</b>	Active Ingredient: Sodium Monofluorophosphate (0.76%) (0.13% w/v Fluoride Ion). Inactive Ingredient: Glycerin, Water, Calcium Carbonate, Hydrated Silica, Xylitol, Chondrus Crispus (Carrageenan), Natural Flavors, Sodium Lauryl Sulfate, Sodium Bicarbonate, Zinc Citrate.	Tom's of Maine Whole Care
<b>Ingredients 3</b>	Arginine Bicarbonate, Benzyl Alcohol, Calcium Carbonate, Hydrated Silica, Natural Flavor (Peppermint Oil and Other Natural Flavor), Sodium Bicarbonate, Sodium Lauryl Sulfate, Sorbitol, Titanium Dioxide, Water, Xanthan Gum, Xylitol.	Tom's of Maine Sensitive; "Sensitive" is also [REDACTED]
<b>Ingredients 4</b>	Calcium Carbonate, Glycerin, Water, Xylitol, Hydrated Silica, Natural Flavor (Peppermint Oil), Sodium Lauryl Sulfate, Zinc Citrate, Carrageenan, Sodium Bicarbonate.	Tom's of Maine Anti-Plaque & Whitening
<b>Ingredients 5</b>	Active Ingredients: Sodium Fluoride (0.243%). Inactive Ingredients: Sorbitol, Water, Hydrated Silica, PEG-6, Sodium Lauryl Sulfate, Flavor, Zinc Citrate, Cellulose Gum, Carrageenan, Sodium Saccharin, Hydroxyethylcellulose, Sodium Citrate, Stannous Chloride, Polyethylene, Titanium Dioxide, Blue 1 Lake.	[REDACTED]
<b>Ingredients 6</b>	Ingredients. Sodium Fluoride 0.24% (0.15% w/v Fluoride Ion) - Anticavity. Inactive Ingredients: Water, Hydrated Silica, Glycerin, Sorbitol, PVM/MA Copolymer, Sodium Lauryl Sulfate, Flavor, Cellulose Gum, Sodium Hydroxide, Propylene Glycol, Carrageenan, Sodium Saccharin, Titanium Dioxide.	[REDACTED]

36. In the actual choice tasks, respondents are shown three different product profiles from which to make a selection (and also provided a “none of these” option). Each product profile is distinguished by the combination of attributes and levels shown above. While each product profile has the same list of attributes, the actual levels for each attribute are randomly displayed (with some documented constraints). Therefore, the respondent is making selections based on comparing different toothpaste products that vary by brand, nutrition facts, type, flavor, and product descriptions. Below is an example of a choice task for a respondent. The product profiles “Toothpaste A,” “Toothpaste B,” and “Toothpaste C” are randomly generated by the Sawtooth software. The “natural” claim in this example is shown as a “Product Description” for Toothpaste A. Respondents are asked “If these were your only options, which of these TOOTHPASTES would you purchase in real life?” Respondents had the option to select one of the three product profiles or select “None of these.”

**Example of a Choice Task for a Respondent in the Price Premium Survey**



37. By making a series of choices across 10 choice tasks, the respondent reveals the utility of the attributes (*e.g.*, price sensitivity, loyalty to a specific brand, appeal of specific claims on labels, etc.). The elegance of the conjoint design is that it encourages respondents to make decision trade-offs in considering various combinations of attributes and levels (for instance, by weighing their loyalty to a specific brand versus their sensitivity to price).

**COGNITIVE INTERVIEWS**

38. To inform the questionnaire design and the selection of the attributes and attribute levels, I conducted one-on-one cognitive interviews with Tom's of Maine consumers. On May 26, 2018, I conducted seven cognitive interviews lasting approximately 30 minutes on average. The cognitive interviewing methodology provided me an opportunity to determine whether

respondents interpreted my items in the manner that I intended, to identify areas for improving the clarity of my survey questions, and to fine-tune the attributes and levels in my conjoint survey.

39. In the cognitive interviews, I showed real Tom's of Maine toothpaste consumers the actual conjoint survey questions on their computer screens and asked for their feedback. Such interviews are the gold-standard for survey pre-testing. These cognitive interviews showed that respondents fully understood that they were engaged in a hypothetical shopping experience focused on the making toothpaste product choices and had all the information needed to make the requested choices. When I received feedback from these cognitive interview respondents, I considered the feedback and incorporated it as appropriate into the final design of the survey.
40. To prevent error in surveys, cognitive interviewing is the gold-standard methodology for testing survey questionnaires with respondents. According to one of the foremost experts in cognitive interviewing, Gordon Willis and his co-author:

Cognitive interviewing is an evidence-based, qualitative method specifically designed to investigate whether a survey question—whether attitudinal, behavioral, or factual in nature—fulfills its intended purpose. The method relies on interviews with individuals who are specifically recruited. These individuals are presented with survey questions in much the same way as survey respondents will be administered the final draft of the questionnaire. Cognitive interviews are conducted before data collection (pretesting), during data collection, or even after the survey has been administered, as a quality assurance procedure.<sup>13</sup>

41. For the cognitive interviews, I showed the respondents the draft price premium survey and asked for feedback on each survey question in the survey, including all of the choice screens in the conjoint survey. These cognitive interviews involved one-on-one dialogue between me and real consumers during which I showed them the actual survey questions and conjoint tasks on their computer screens and invited their feedback on the survey. I conduct cognitive

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<sup>13</sup> Gordon B. Willis and Anthony R. Artino, Jr. What Do Our Respondents Think We're Asking? Using Cognitive Interviewing to Improve Medical Education Surveys. J Grad Med Educ. 2013 Sep; 5(3): 353–356.

interviews as part of the best practices for survey development but ultimately because the survey respondents are the ultimate judge of whether the survey questions are clear, unbiased, and make sense to them as consumers who buy Tom's of Maine toothpastes.

42. When I received feedback from these cognitive interviews respondents, I considered the information and made appropriate changes to the final design of the conjoint survey. Based on respondent feedback during the cognitive interviews, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
46. My cognitive interview respondents confirmed that my conjoint survey provided a realistic replication of the marketplace for toothpaste products and that my selection of attributes (brand, flavor, product benefits, product descriptions, ingredients, and price) took into account the factors that were important to their consumer choices. My cognitive interviews verified that my survey included the various types of information that matter to consumers.
47. None of my cognitive interview respondents perceived my survey to be sponsored or funded for a litigation purpose or lawsuit. To the extent that respondents had an opinion, their general impressions was that the survey was sponsored by a toothpaste company. My notes from the cognitive interviews are in Attachment F.

#### **INTERVIEW SAMPLE SIZE & DATA COLLECTION**

48. I exceeded industry best practices for sample size by having completed interviews with 1,000 U.S. consumers who purchased Tom's of Maine toothpaste in the past 12 months. My calculation of the price premium associated with the "natural" claim is based on these 1,000 respondents. Industry guidelines recommend having at least 150 respondents for a given segment participating in the conjoint survey and at least at least 300 conjoint interviews in total for robust quantitative research.<sup>14</sup> I exceeded the guidelines substantially by collecting 1,000 interviews for the analysis. To collect the 1,000 completed interviews for the analysis, I initially asked 17,408 U.S. adults to take the online survey. I used the U.S. Census sample balancing controls to obtain a nationally representative sample of U.S. adults beginning my survey, after which I administered the screening questions to identify the 1,000 respondents that met my definition of the study target population. Twenty-nine percent of the interviews were conducted with respondents residing in the states of California, Florida, or New York.
49. **Survey Questionnaire Programming and Survey Data Collection.** I retained Research Now Survey Sampling Inc. (RNSSI) to provide me with the online survey vendor services for programming the questionnaire, providing the respondent sample, and for collecting the

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<sup>14</sup> Bryan Orme, 2010, "Sample Size Issues in Conjoint Analysis."  
<https://www.sawtoothsoftware.com/download/techpap/samplesz.pdf>.

survey data. Based on my experience in the industry, the RNSSI online panel sample is regarded as among the most credible and reliable non-probability online panel having the necessary scale for this study, which involves collecting a substantial number of interviews on a relatively low-incidence consumer segment. RNSSI programmed my survey questionnaire into an online survey under my active supervision. The actual survey data were collected using survey software and servers operated by RNSSI.

50. **Steps Taken to Disguise Survey Objectives from the Respondents.** I took certain steps to avoid a potential risk for the reliability of the study that would result from respondents answering the survey questions strategically to either help or hurt Defendants' interests. I camouflaged the survey objectives to address the risk of strategic responses. First, with respect to the screening section of the survey, my first screening question included a wide variety of personal care product types and then a wide range of oral care product brands. By casting a wide net for the types of personal care products and toothpaste brands in my survey questions, I disguised the research objectives from the respondents. From my cognitive interviews with respondents, I understand that these questions effectively disguised the survey objectives. I asked respondents at the end of my cognitive interviews about their opinion regarding which organization or type of organization is paying for the study. Respondents perceived that the survey was part of a market research study being conducted by one of the toothpaste companies.
51. **Pretest Survey.** After the completion of the cognitive interviews and having made the changes to the questionnaire resulting from the cognitive interviews, I conducted a pretest to test the price premium survey with a representative sample of members of the study target population. The pretest survey is, in a sense, a dress rehearsal for the data collection. The pretest was conducted online using the same sampling and data collection procedures that I subsequently employed for the full data collection. I conducted the pretest for the following purposes: (i) for quality control and quality assurance testing of the survey instrument, (ii) to validate that the survey questionnaire was programmed correctly to my specifications, (iii) to identify any survey questions that were unclear to respondents, and (iv) to analyze the data to identify any problems, such as unexpected missing data. On June 4, 2018, I completed 203 interviews interviews with pretest respondents. I paused the data collection so that I could review the collected survey interview data. I determined that the survey questionnaire was



functioning appropriately and that the survey data were reliable. I authorized RNSSI to resume the data collection on June 5. The data collection was completed on June 8, 2018.

52. The marginal statistical frequencies for the close-ended survey questions, the raw survey data, and codebook are included as Attachments G, H, and I, respectively.

### **METHODOLOGY FOR THE PRICE PREMIUM ANALYSIS**

53. I conducted the analysis of the conjoint data using a market simulation tool produced by Sawtooth Software, the industry leader in market research for conjoint data collection and analysis software. Sawtooth's authors explain that:

the simulator is used to convert raw conjoint (partworth utility) data into something much more managerially useful: simulated market choices. Products can be introduced within a simulated market scenario and the simulator reports the percentage of respondents projected to choose each product. A market simulator lets an analyst or manager conduct what-if games to investigate issues such as new product design, product positioning, and pricing strategy. Market simulators are commercially available or can be constructed using spreadsheet programs.<sup>15</sup>

54. In short, a market simulation tool is a "choice laboratory" for testing multiple real-world possibilities (*e.g.*, the price premium paid estimates for products with and without the challenged claims) and supports the estimation of preferences across consumer segments.
55. With respect to the analysis tools needed to analyze the survey data, the raw data created by a conjoint survey is fundamentally different from a non-conjoint survey data obtained through a direct-questioning methodology that is typical in a marketing or public opinion survey. In a conventional survey data set, survey answers such as "yes" and "no" are coded into "1" and "2," making possible a straightforward count of survey responses. No "modeling" of the data is required to draw inferences. In contrast, a conjoint study leads to a set of utilities or part-worths that quantify the value respondents' place on each level of each attribute (*e.g.*, for each price level for the price attribute). To draw inferences from the utility data, conjoint analysis leverages Bayesian statistics (technically, Hierarchical Bayesian modeling) to

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<sup>15</sup> Bryan Orme, Sawtooth Software, on "Market Simulators for Conjoint Analysis." <https://www.sawtoothsoftware.com/download/techpap/introsim.pdf>. Also, Joel Huber et al., 2006. "Dealing with Product Similarity in Conjoint Simulations."

provide individual respondent-level models. The price premium survey results presented in my declaration are calculated using a market simulator employing Hierarchical Bayesian models developed in the Sawtooth Software system.<sup>16</sup> RNSSI, the survey vendor that programmed my conjoint survey and collected the data from its online panel, created the market simulator under my direction using the Sawtooth software (Sawtooth Lighthouse Version 9.5.3 to estimate the part worth utilities). The market simulator that I used to calculate the price premium is based on a share of preference model.<sup>17</sup>

56. The market simulation provides a statistically robust estimate of the price premium that purchasers paid as a result the challenged “natural” claim as a fraction of the total price paid by consumers for the Tom’s of Maine toothpaste products. For instance, a price premium of 10% for a challenged claim on a toothpaste product sold for \$4.00 is the same as stating that \$0.40 of the product price is attributable to the premium paid for the challenged claim. In this example, the purchaser would need to be presented a 10% discount for the product without the challenged claim to have the same market value as the product with the challenged claim.
57. The design of my conjoint survey and my market simulator allowed me to calculate the price premium attributable to the challenged label for the marginal consumer, that is, the additional price that the marginal consumer would pay for the product with the “natural” claim. As explained by Nobel Prize winner Daniel McFadden and his co-authors, the price premium of the “infringing feature” (in this case, the challenged “natural” claim) is the same as the willingness to pay of the marginal consumer that can be identified by offering respondents a “no buy” option in the conjoint survey.<sup>18</sup> I provided respondents such a “no buy” option in the form of a “none of these” option in the choice sets shown the respondents in the price premium survey. By using this procedure, and by further taking into account the supply-side

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<sup>16</sup> Sawtooth Software Technical Paper Series, 2009, “The CBC/HB System for Hierarchical Bayes Estimation.” Sawtooth Software Technical Paper Series, 2017, “The CBC System for Choice-Based Conjoint Analysis.”

<sup>17</sup> Orme, Bryan K. and Kejth Chrzan. 2017. Becoming an Expert in Conjoint Analysis. Sawtooth Software Inc. Chapter 14. Orme, Bryan K. “Market Simulators for Conjoint Analysis.” Chapter 10 in Bryan Orme’s Getting Started with Conjoint Analysis.

<sup>18</sup> Lisa Cameron, Michael Cragg and Daniel McFadden, “The Role of Conjoint Surveys in Reasonable Royalty Cases,” Law360, October 16, 2017.

factors as discussed above, I identified the marginal consumer as a Tom's of Maine toothpaste consumer who is indifferent between the market price of the toothpaste with the "natural" claim and the same product without the challenged claim.

58. To produce reliable and conservative estimates of value, I purposely made an analytic assumption that results in minimum estimates of the price premium paid as a result of the challenged claim. [REDACTED]

Because consumers as economic actors are sensitive to the price (with lower valuations for the product as the price increases), using the highest price points available for the market simulation produces conservative, minimal estimates of the price premiums. Therefore, I have made the conservative adjustment in my reporting of the price premium by using the highest price point shown the respondents in my price premium survey.

59.

Bar Index	Approximate Length (%)
1	100
2	98
3	75
4	85
5	98
6	98
7	75
8	100
9	75
10	100
11	75
12	100
13	98
14	85
15	35
16	90
17	45

[REDACTED]

[REDACTED]

[REDACTED]

60. My market price premium statistic, which is based on the above-noted assumptions in the market simulation, are accurately generalizable to all of Defendants' toothpaste products. Indeed, they provide a conservative, minimum estimate of the market price premium paid by the proposed class for Tom's of Maine toothpaste products with the "natural" claim.
61. Based on my analysis of the data from the price premium survey and my expert judgment, I conclude that class members paid a market price premium that is solely attributable to the "natural" claim used by Defendants:

**Price Premium Solely Attributable to the "Natural" Claim on Tom's of Maine Toothpastes**

No. Respondents	Price Premium / Product Price	Price Premium Percent
[REDACTED]	[REDACTED]	[REDACTED]

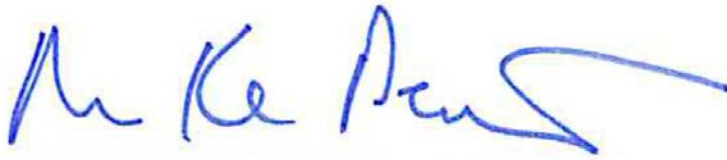
62. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

63. To enable replication of prime premium estimate, the conjoint survey data (part-worth utilities) and market simulator itself are included as Attachments J and K, respectively.

### **CONCLUSION**

64. I drew on my 18 years in designing and conducting online surveys and my 25 years of experience in survey research to design and produce a reliable price premium survey. I followed a rigorous protocol for developing the survey questionnaire using cognitive interviews and pretesting. I carried out a series of quality control and quality assurance measures to confirm that the respondents understood the survey questions. I designed the survey sample to identify a representative sample of Tom's of Maine toothpaste consumers. I processed, analyzed, and reported on the survey data based on my experience and expert judgment.
65. In my expert opinion, my survey provides a reliable and accurate measurement of the extent to which there is a marketplace price premium attributable to the challenged "natural" claim for the proposed class of Tom's of Maine toothpaste consumers.
66. In my expert opinion, the results from my cognitive interviews and price premium survey establish that the "natural" claim is material to the purchasing decisions of Tom's of Maine toothpaste consumers by communicating that the toothpaste product is made using natural ingredients.
67. While I designed the price premium survey to provide data for the calculation of any economic damages suffered by the proposed class of Tom's of Maine toothpaste consumers, it is my expert opinion that I could apply my price premium survey methodology to consumers of Tom's of Maine deodorant products, providing reliable data on any economic loss caused by Defendants' use of the "natural" claim on their deodorant products. If requested by Plaintiffs' counsel, I would conduct my price premium survey of the Defendants' deodorant products using the same methodology and analytic approach that I described in this declaration and expert report, with appropriate changes to the sampling protocol and to the selection of attributes and levels for the conjoint survey.
68. The facts and data that I considered for developing the price premium survey and my opinions in this report are cited herein and listed in my attached list of considered materials. I reserve the right to modify my opinions if I am provided additional information, and to supplement them if necessary to respond to criticisms or objections from the opposing party.
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I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge. Executed in Redwood City, California on June 15, 2018.



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J. MICHAEL DENNIS, PH. D

JUNE 15, 2018

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DATE

## List of Attachments

A Curriculum Vitae of J. Michael Dennis, Ph.D.

B Local Market Scan of Retail Pricing

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

L List of Considered Materials